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DEPARTMENT OF GENETICS
School of Medicine

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The Honorable Lyndon B. Johnson
Vice President of the United States
Washington, D.C.

Dear Mr. Vice President:

Mr. Kennedy's recent remarks were of very great interest to every American concerned with the national space program, and, with your indulgence, may perhaps at least serve as an occasion for this letter.

There is one mission within the reach of our present vehicles that, with some luck, could help us regain the initiative. This is an expedition to Mars with advanced instrumentation having the aim of detecting the presence or absence of life.

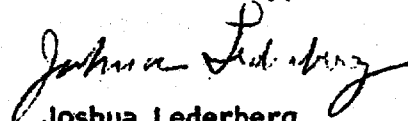
We have already missed the boat twice. With adequate funding and drive, we might have had at least a fly-by to Mars in 1960 and again in 1962. These missions have withered away and it is probably too late to revive them. The next opportunity for Mars is in 1964, but it will take energetic planning, and funding now, for us to take good advantage of it. I should point out that Mariner B, a very clever and well contrived Mars probe, is now being planned for 1964. The fly-by vehicle will drop a small capsule to the Mars surface and also serve as a radio relay from it to the Earth. But this is a marginal effort. If two or three vehicles could be fired within a brief interval, they would mutually reinforce each other - against the risks of a vehicle failure, and in communications. With a single vehicle, communication from the capsule would end in an hour or so as the fly-by goes off. A second relay or orbiter could greatly expand this capability and also allow for a heavier instrument load in the capsule.

Will the Russians beat us to it? Their sturdier vehicles make it hard to compete with them in brute force, but I do not think they begin to match us in instrumentation and communication, and these missions would put great emphasis on these skills. This is especially true in biochemical and basic biological studies where their work is really surprisingly backward by comparison with their standing in the physical sciences and in rocket engineering. In any case, they are limited, just as we are, to specific firing intervals in 1962 and 1964. So they have just one chance next year to overshadow our effort. In any case, there would be very great scientific values to an expanded mission -- by general admission, far more than might attach to various man-in-space proposals, where the Russians have the lead now anyhow.

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There are many other useful and striking things we can do with our space program under vigorous leadership. Unfortunately, there have been such great pressures to develop the vehicles, that we have not been spending the proportionate effort needed to make best scientific and technological use of the ones we have. It is incredible to me that the contract solicitation for industrial proposals to develop a microscope for planetary studies, a rather modest investment, should have been delayed for months owing to a shortage of research funds at the Jet Propulsion Laboratories. I hope the sense of urgent purpose indicated in Mr. Kennedy's remarks and by your own direction of the Space Council will lead to the proper remedies.

Yours sincerely,



Joshua Lederberg
Professor of Genetics

Enc: Clipping from N.Y. Times, April 22, 1961.

President orders top-level review to determine an area in which the U.S. can lead -- Johnson to head study.

"We have to consider whether there is any project now, regardless of the cost, which offers us hopes of being pioneers in a project!"
____ Pres. Kennedy.